WHAT IS CLAIMED IS:

1. A fluid control device comprising:

a film having fine pores and formed by anodizing a material containing aluminum as principal ingredient; and

a film having very fine pores smaller than said pores and containing silicon as principal ingredient, wherein

at least some of said fine pores and some of said very fine pores are linked with each other along the flow path of fluid to be controlled.

2. A device according to claim 1, wherein

the average diameter of said fine pores is not smaller than 5 nm.

3. A device according to claim 1, wherein

the average diameter of said very fine pores is not greater than 10 nm.

4. A device according to claim 1, wherein

said film containing silicon as principal ingredient and having very fine pores is made of a material containing amorphous silicon as principal ingredient.

5. A device according to claim 1, wherein

said film containing silicon as principal ingredient and having very fine pores is made of a material containing silicon oxide as principal ingredient.

6. A device according to claim 5, wherein the average diameter of said very fine pores is not greater than 3 nm.

7. A device according to claim 1, wherein said film containing silicon as principal ingredient and having very fine pores is obtained by removing cylinders with an average diameter not greater than 10 nm and containing aluminum as principal ingredient from a mixed body of $Al_{1-x} \cdot Si_x$ ($0.2 \leq x \leq 0.7$) having the cylinders.

8. A device according to claim 1, wherein said film having fine pores and formed by anodizing a material containing aluminum as principal ingredient and said film having very fine pores smaller than said pores and containing silicon as principal ingredient are bonded to each other directly or by way of a bonding layer having a film thickness not greater than 10 nm.

9. A device according to claim 8, wherein

the diameter of the pores of said film formed by anodizing a material containing aluminum as principal ingredient is smaller at the side bonded to said film having very fine pore and containing silicon as principal ingredient than at the side that is not directly bonded.

10. A device according to claim 1, wherein the thickness of said film having fine pores and formed by anodizing a material containing aluminum as principal ingredient is greater than that of said film having very fine pores smaller than said pores and containing silicon as principal ingredient.

11. A device according to claim 10, wherein said film having fine pores and formed by anodizing a material containing aluminum as principal ingredient has a film thickness not smaller than 1 μm and said film having very fine pores smaller than said pores and containing silicon as principal ingredient has a film thickness not greater than 0.5 μm.

12. A device according to claim 1, wherein said film having fine pores and formed by anodizing a material containing aluminum as principal ingredient is arranged at the upstream side of said fluid control device and said film having very fine

pores smaller than said pores and containing silicon as principal ingredient is arranged at the downstream side of said fluid control device.

13. A method of manufacturing a fluid control device comprising:

a step of forming a layer containing at least aluminum as principal ingredient and a mixed film of $Al_{1-x} \cdot Si_x$ ($0.2 \leq x \leq 0.7$) including cylinders having an average diameter not greater than 10 nm and containing aluminum as principal ingredient;

a step of forming fine pores in said layer containing aluminum as principal ingredient by anodization; and

a step of removing the cylinders containing aluminum as principal ingredient from said mixed film of $Al_{1-x}Si_x$.

14. A method according to claim 13, wherein said mixed film of $Al_{1-x}Si_x$ ($0.2 \leq x \leq 0.7$) is formed by sputtering.

15. A method according to claim 14, wherein said step of removing the cylinder containing aluminum as principal ingredient is a step using chemical etching.

16. A method according to claim 13, further comprising:

a step of oxidizing the film obtained by removing said cylinders containing aluminum as principal ingredient and transforming it into a silicon oxide film having very fine pores after said step of removing cylinders containing aluminum as principal ingredient.

17. A method according to claim 13, wherein said step of removing cylinders containing aluminum as principal ingredient is a step of anodizing said mixed film of $Al_{1-x}Si_x$.

18. A method according to claim 17, wherein said step of anodizing said mixed film of $Al_{1-x}Si_x$ is a step conducted in an sulfuric acid solution and also a step of anodizing said layer containing aluminum as principal ingredient in an sulfuric, oxalic or phosphoric acid.

19. A method according to claim 13, further comprising

a step of annealing at temperature not lower than 100°C after the completion of all of said steps.

20. A device including a first porous body comprising alumina and having a first pore diameter and

a second porous body comprising silicon or silicon oxide and having a second pore diameter smaller than the first pore diameter.